

# Inverse Trig. Functions

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Find the exact value of the expression without using a calculator or table.

1)  $\sin^{-1}\left(\frac{-1}{2}\right)$  1) \_\_\_\_\_

2)  $\arcsin\left(\frac{1}{2}\right)$  2) \_\_\_\_\_

3)  $\cos^{-1}\left(\frac{\sqrt{2}}{2}\right)$  3) \_\_\_\_\_

4)  $\arccos\left(\frac{1}{2}\right)$  4) \_\_\_\_\_

Find the exact value of the expression in degrees without using a calculator or table.

5)  $\arcsin(-1)$  5) \_\_\_\_\_

6)  $\cos^{-1}\left(\frac{-\sqrt{2}}{2}\right)$  6) \_\_\_\_\_

7)  $\arcsin(0.5)$  7) \_\_\_\_\_

8)  $\arccos(-1)$  8) \_\_\_\_\_

Find the exact value of the expression without using a calculator or table.

9)  $\arctan(-1)$  9) \_\_\_\_\_

10)  $\cot^{-1}\left(\frac{1}{\sqrt{3}}\right)$  10) \_\_\_\_\_

11)  $\operatorname{arcsec}(2)$  11) \_\_\_\_\_

12)  $\cot^{-1}(-\sqrt{3})$  12) \_\_\_\_\_

Find the approximate value of the expression with a calculator. Round your answer to two decimal places.

13)  $\sin^{-1}(0.5682)$

13) \_\_\_\_\_

14)  $\sec^{-1}(-3.44)$

14) \_\_\_\_\_

15)  $\operatorname{arcsec}(\sqrt{6})$

15) \_\_\_\_\_

16)  $\operatorname{arccot}(-12)$

16) \_\_\_\_\_

17)  $\cot^{-1}(15.6)$

17) \_\_\_\_\_

Find the exact value of the composition without using a calculator or table.

18)  $\tan\left(\arccos\left(\frac{1}{2}\right)\right)$

18) \_\_\_\_\_

19)  $\sin^{-1}\left(\cos\left(\frac{2\pi}{3}\right)\right)$

19) \_\_\_\_\_

20)  $\arcsin\left(\sin\left(\frac{3\pi}{4}\right)\right)$

20) \_\_\_\_\_

21)  $\cos^{-1}\left(\cos\left(\frac{3\pi}{2}\right)\right)$

21) \_\_\_\_\_

22)  $\sin^{-1}\left(\sin\left(\frac{3\pi}{4}\right)\right)$

22) \_\_\_\_\_

23)  $\sin\left(\csc^{-1}(-2)\right)$

23) \_\_\_\_\_

Find an equivalent algebraic expression for the composition.

24)  $\sin(\arccos(x))$

24) \_\_\_\_\_

25)  $\cos(\arctan(x))$

25) \_\_\_\_\_

26)  $\tan(\arcsin(x))$

26) \_\_\_\_\_

27)  $\sec(\arctan(x))$

27) \_\_\_\_\_

Find the acute angle  $\theta$ , to the nearest tenth of a degree, for the given function value.

28)  $\sin \theta = 0.557$

28) \_\_\_\_\_

29)  $\cos \theta = 0.06$

29) \_\_\_\_\_

30)  $\csc \theta = 1.3$

30) \_\_\_\_\_

Determine the amplitude, period, phase shift, and range for the given function.

31)  $f(x) = 5 \sin(4x - \pi) - 3.$

31) \_\_\_\_\_

Find the acute angle  $\theta$  to solve the given equations.

32)  $\sin \theta = 1/2$

32) \_\_\_\_\_

33)  $\cos \theta = 1/2$

33) \_\_\_\_\_

34)  $\tan \theta = 1$

34) \_\_\_\_\_

35)  $\sin \theta = \sqrt{2}/2$

35) \_\_\_\_\_

36)  $\sin \theta = \sqrt{3}/2$

36) \_\_\_\_\_

37)  $\cos \theta = \sqrt{3}/2$

37) \_\_\_\_\_